

## Joint Infrastructure Committee

Kirk T. Steudle, P.E.

Director

February 14, 2013



## Overview of Asset Management

- ✓ What is Asset Management
- ✓ Use in Michigan & Other States
- ✓ Pavement Distress Rating
- ✓ What Roads to Fix & When
- ✓ Maximizing Return on Investment



# What is Asset Management?

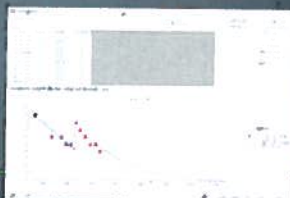
**Asset Management :** "An ongoing process of maintaining, upgrading and operating assets cost-effectively, based on a continuous, physical inventory and condition assessment." [MCL 247.659(a)]

MDOT as an organization and a member of the Transportation Asset Management Council is a proponent of the asset management approach.

## Promote Best Practice in Pavement and Bridge Preservation



Data



Tools



Training

# What is Asset Management?

## Four Step Process

**Monitoring & Reporting**  
(Road Condition Rating)

**Goals & Objectives**  
(Long-Range Vision)

**Plans & Programs**  
(Multi-Year Program)

**Program Delivery**  
(Implementation)

## TAMC Support

**Surface condition rating: PASER**

- MDOT, county, city/village, RPO
- Federal and non-federal aid roads

**Analyze improvement scenarios**

- RoadSoft Training
- Network and project level analysis

**Three – Five Year Program**

- Pavement Preservation Targets
- Major Rehab and Reconstruction
- Report to TAMC (Act 51 Report)

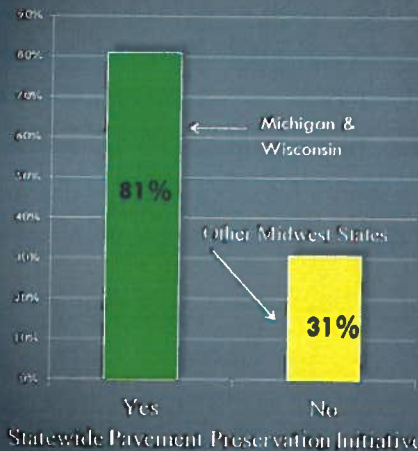
**Document project completion**

- Completed improvements
- Ays planned projects
- Report to TAMC (Act 51 Report)





## Michigan & Other States



Source: Midwest Regional University Transportation Center  
University of Wisconsin, 2008

2012	Participants	Agencies
County	1374	83
City	991	178
Village	157	72
Total	2522	333
Townships	620 (including 526 elected)	

### Asset Management Implementation in Michigan Local Agencies: Survey Results

- 76% of agencies have implemented asset management.
- 80% use a mix-of-fixes approach
- 83% are collecting more than minimum pavement condition rating
- 8% are not using PASIR ratings
- 31% of agencies in other states are using asset management.

Source: Michigan Local Technical Assistance Program,  
Michigan Tech. University, 2012

## Pavement Distress Rating

**GOOD**



PASER = 10, 9, 8

### Routine Maintenance

- Crackseal
- Minor Patching

**FAIR**



PASER = 7, 6, 5

### Preventive Maintenance

- Crackseal
- Patching
- Surface Treatment
- Concrete Joint Repair

**POOR**



PASER = 4, 3, 2, 1

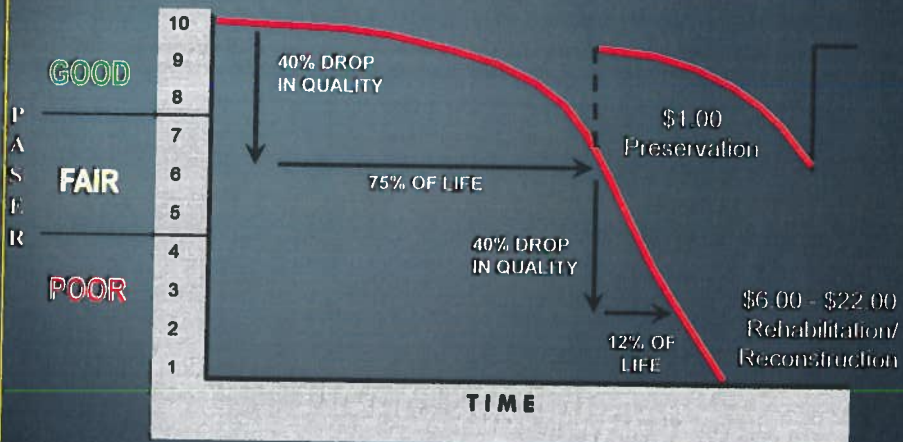
### Rehab/Reconstruct

- Resurface
- Structural Overlay
- Replace Concrete Slab
- Complete Reconstruct

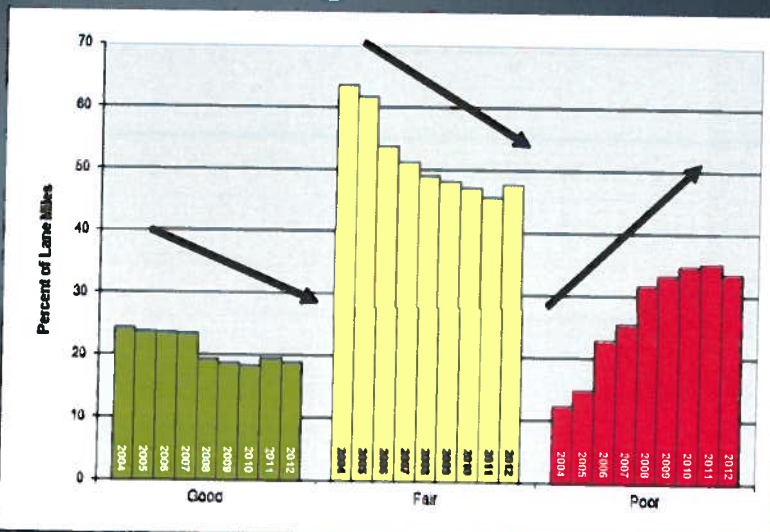
# What Roads to Fix and When

## Maintaining Roads in Good Condition

*"Right Fix on the Right Road at the Right Time to Maximize Return on Investment"*

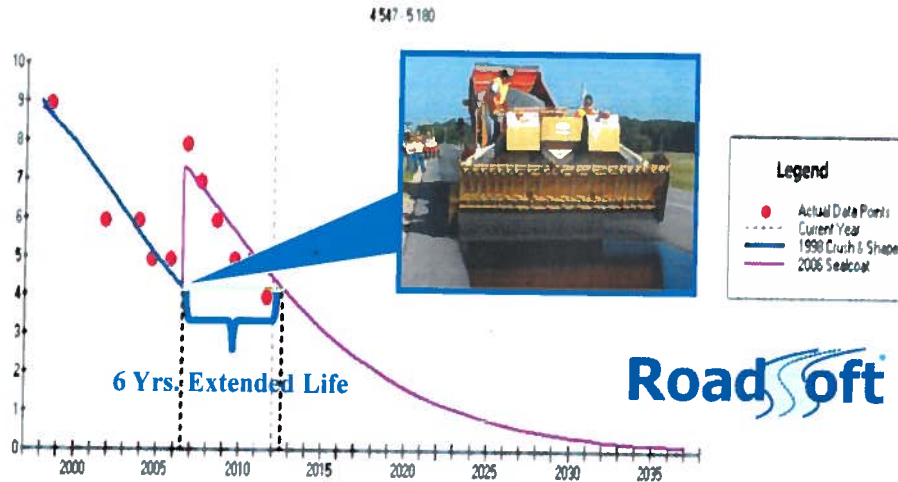


## What is the Condition of Michigan's Roads?



# Maximizing Return on Investment

Gompertz Growth Model Unforced through Zero



# Questions?



“Providing the highest quality integrated transportation services for economic benefit and improved quality of life.”



Joint Meeting  
House Transportation and Infrastructure  
&  
Senate Infrastructure Modernization

February 14, 2013

Michigan Concrete Association

Daniel DeGraaf, P.E.

Executive Director

# Asset management

- 1997 PA 79 Last Gas Tax Bill
  - included provisions regarding pavement management systems
- 2002 PA 499 Established Transportation Asset Management Council
  - Activity was to be the federal-aid eligible system
    - state trunkline system 9,681 miles
    - over 23,000 miles of local agency roads

# Asset Management

## What is it?

- Decision Making Tool - for the team to manage the existing system
  - Legislators
  - Engineers
- Monitor long term goals
- Establish funding levels required to meet them
- Plan rehabilitations – best bang for the buck

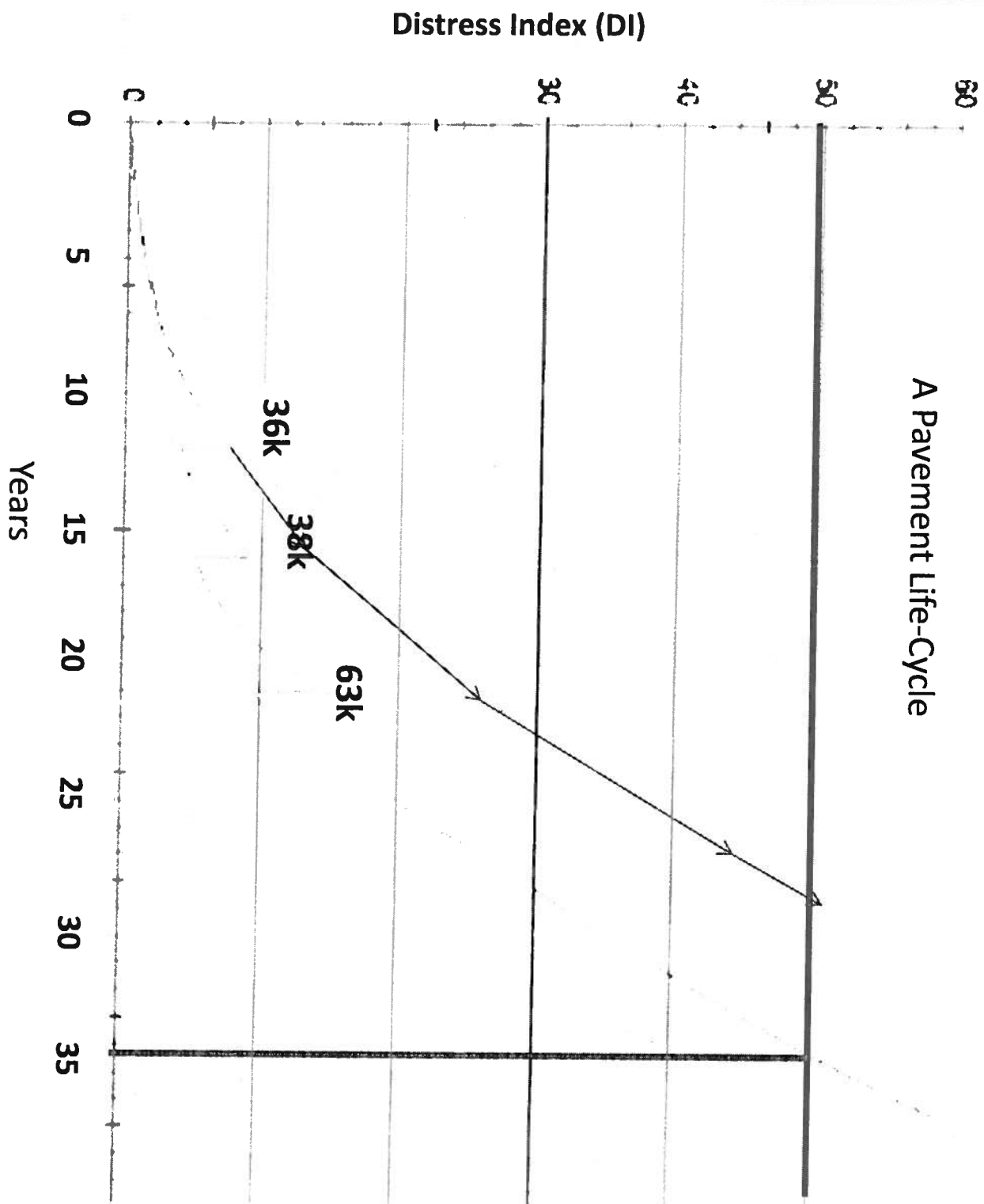


# Asset Management

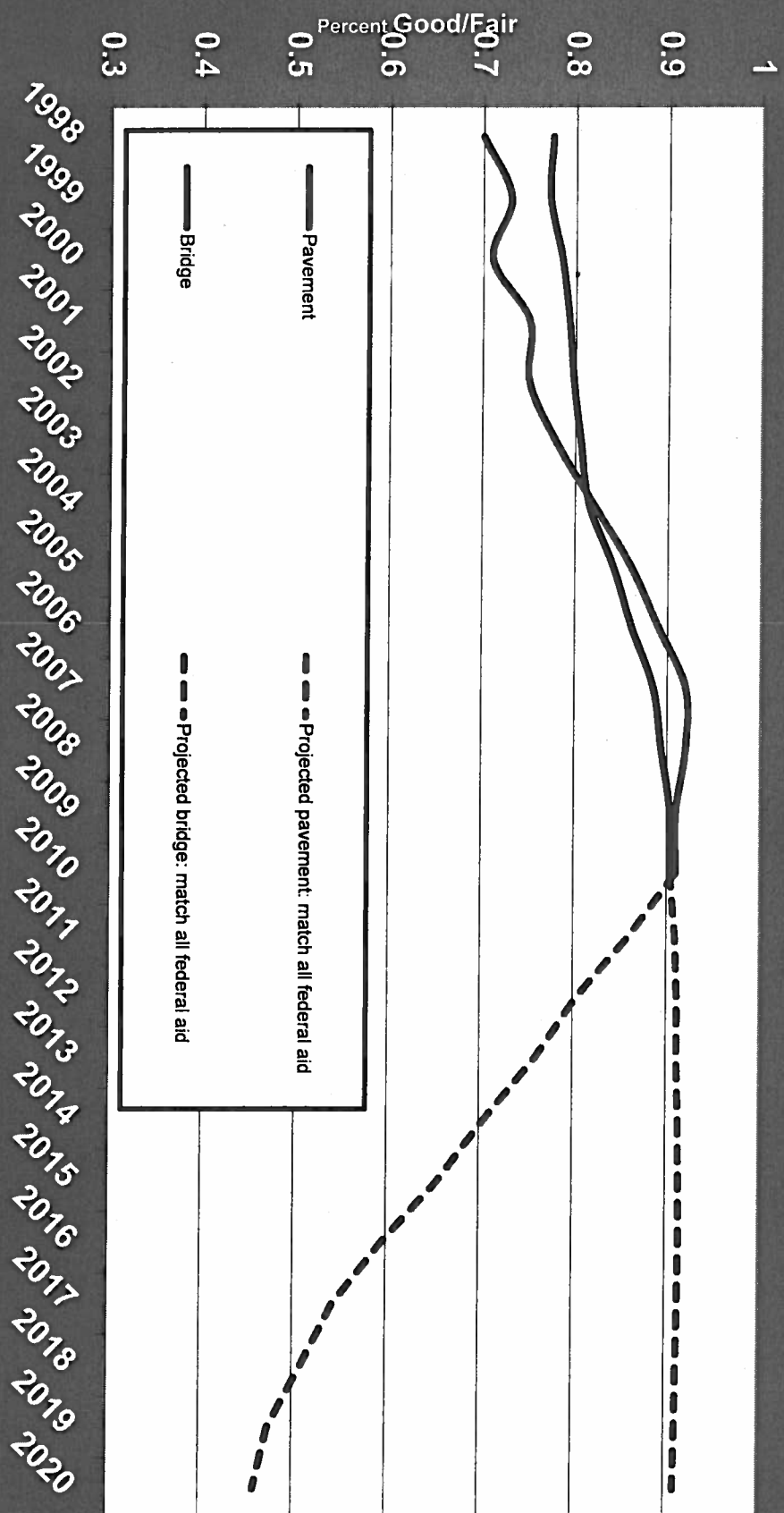
## How does it work?

- Pavements are designed to protect the soil from the traffic loading
- Water is our number 1 natural resource
- Water is a major contributor to the wear on our roads and bridges
- The rate of deterioration increases over time
- Regular inspections of our road assets allow us to track the health of our roads & other assets

# A Pavement Life-Cycle



# MDOT Trunkline Road and Bridge Condition Actual 1998-2010, Projected 2011-2020





# Michigan Asset Management Today

- Delivered as promised – Top National Program
- Expanding to cover more of local road system
  - Because it's a good idea and it works!
  - Michigan Tech is coordinating the training program for local engineering staff
- Underfunding is a reality!

# Open for Business

